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Higher incidence of arrhythmia in COVID-19 than in other community-acquired pneumonia: possible role of concurrent therapies

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In their recent meta-analysis, Liao et al. concluded that the incidence of arrhythmia was higher in COVID-19 than in other community-acquired pneumonia (CAP) (16.8% vs. 4.7%, 95% CI 2.4–8.9) [1, 2], with 2 out of 10 COVID-19 patients dying after developing arrhythmia [3]. Higher incidence rates of conduction disorders and premature contractions were found in COVID-19 patients, compared to other types of arrhythmias [1]. The authors noted that possible mechanisms of arrhythmia may include cardiac damage from metabolic disarray, hypoxia, neurohormonal or inflammatory stress and infection-related myocarditis in the setting of COVID-19 [4]. However, in the vast majority of the studies included, a substantial number of patients were receiving hydroxychloroquine [1], and sometimes azithromycin, and lopinavir/ritonavir [3]. Currently, there is no robust clinical evidence for a benefit associated with these drugs in the treatment of COVID-19, though most, if not all, are associated with the potential to prolong the QT interval, and induce ‘Torsades de Pointes,’ with a consequent risk of drug-induced sudden cardiac death [3]. We felt it important to point out that treatment with hydroxychloroquine in particular may have contributed to these arrhythmias in COVID-19 patients [1]. Given an estimated prevalence

of 1 per 2000 of congenital long QT syndrome (LQTS) in the general population [5] and given the fact that it is generally considered to be significantly underdiagnosed, administration of QT interval prolonging drugs in COVID-19 patients may go some way to explain the increased incidence of arrhythmia. [5].

Authors’ response

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The authors appreciate Dr. Honore and his team’s valuable comments on our previous meta-analysis of arrhythmia in COVID-19 patients [1]. We agree with the viewpoint that higher incidence of arrhythmia in COVID-19 patients reported in prior literature could probably be explained by the complicated treatment [6].

This comment refers to the article available online at <https://doi.org/10.1186/s13054-020-03368-6>.

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However, the management strategies for COVID-19 are evolving quite rapidly, and some treatments with potential cardiac side effects, such as hydroxychloroquine, azithromycin and lopinavir/ritonavir, are not recommended under the current guidelines [7]. While existing systematic reviews and meta-analyses should be continually updated, our presented work maintains its emphasis on the clinical importance of monitoring arrhythmia to optimize patient outcomes during this pandemic [1, 8].

Abbreviations

CAP: Community-acquired pneumonia; LQTS: Long QT syndrome.

Acknowledgements

We wish to thank Dr. Willem Boer for critical review of the manuscript.

Authors' contributions

PMH, SM, SR, DDB designed the paper. All authors participated in drafting and reviewing. All authors read and approved the final version of the manuscript.

Funding

None.

Availability of data and materials

Not applicable.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare to have no competing interests.

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Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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